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Endicott Wellfield, Endicott (V),
Broome Co., Region 7, Site #704008
Community Relations

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Endicott Wellfield

Public Informational Meeting - August 11, 1987

presented by the

New York State Department of Environmental Conservation

Background

The Endicott Wellfield Site is located near the southwestern boundary of the Village of Endicott in Broome County, New York. Routine sampling, done by the United States Environmental Protection Agency (USEPA) in May 1981, found the Village of Endicott's Ranney Well to be contaminated with volatile organic compounds. Vinyl chloride, at 8.4 parts per billion (ppb) was of particular concern. Regular testing, by USEPA and the New York State Department of Health (NYSDOH) since the May 1981 discovery, has confirmed volatile organic contamination of the Ranney Well. Various studies were performed to quantify the extent of contamination, determine the source(s) of contamination, and develop remedial alternatives.

To date, several remedial actions have been carried out by the Village of Endicott and the New York State Department of Environmental Conservation. In January and February of 1983, the two most contaminated laterals (D2 and D3) of the Ranney Well were closed. On March 9, 1983, a diffused air system treatment was installed in the Ranney Well. In June 1984, a purge well was installed upgradient of the Ranney Well on the En-joie Golf Course to intercept the contaminant plume. Ranney Well data for February 1985 to April 1987 indicate that the purge well has captured a portion of the contaminant plume. The result is that vinyl chloride is now only occasionally detected at 1 to 3 ppb and at other times is non-detectable.

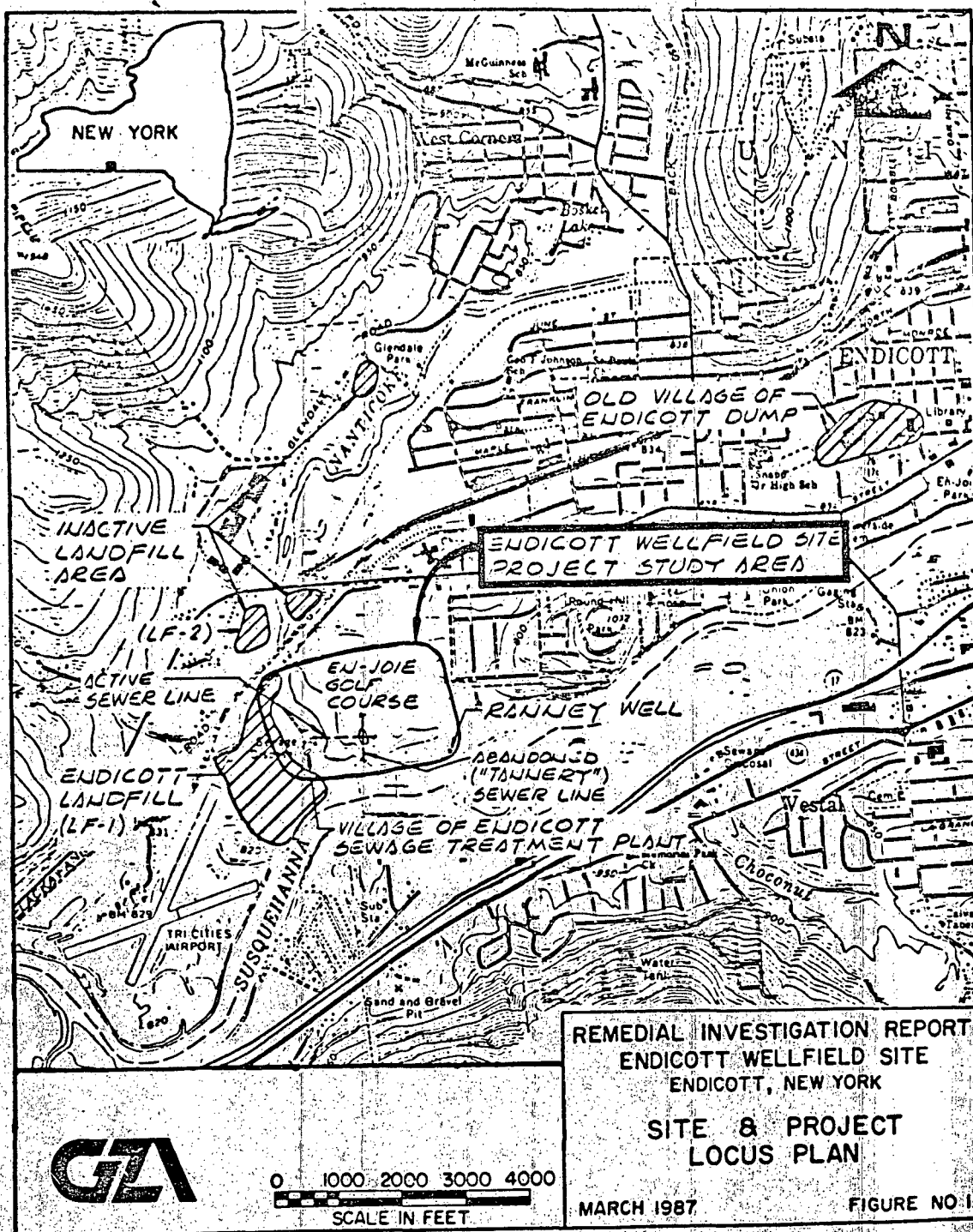
In March 1986, the NYSDEC Division of Solid and Hazardous Waste contracted with TAMS Consultants, Inc. to perform a Remedial Investigation/Feasibility Study (RI/FS) for this site. The purpose of the RI/FS was to define the existing geologic and hydrologic conditions of the site, identify the source(s) and extent of contamination, evaluate the potential impacts of the site on the public health and environment, and to identify, evaluate, and select the most cost-effective, environmentally sound, long-term remedial measures.

Field work performed during the RI included the excavation of test pits in the area of an abandoned sewer in the southwest corner of the En-joie Golf Course, a geophysical study to determine the underlying geological conditions and extent of contamination plume, and the

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installation and sampling of groundwater monitoring wells. Groundwater analyses found three volatile organics (VOC's) to be most prevalent; chloroethane, vinyl chloride, and trans 1,2-dichloroethene. These three compounds were found consistently in wells located both east and west of the Nanticoke Creek. The highest concentration of these primary VOC's was detected west of the Nanticoke Creek at a groundwater seep emanating from the Endicott Village Landfill.

As a result of the field work performed and subsequent analysis of the data by TAMS and their sub-consultant GZA, the following conclusions were reached. The abandoned ("tannery") sewer line was ruled out as a source of contamination due to observations made during test pit excavations. The unnamed landfill on the east bank of the Nanticoke Creek was ruled out as a source due to the relatively "clean" wells located between this landfill and the Ranney Well. The Town of Union Landfill located on the west bank of the Nanticoke Creek could not be ruled out as a source due to insufficient information. The Endicott Village Landfill is a suspected, but unconfirmed source of Ranney Well contamination. Additional information is required to confirm the source(s) of Ranney Well contamination.

Using data generated during the Remedial Investigation (RI), a baseline health risk assessment was performed to determine the present level of risk to public health associated with contamination of water at the Ranney Well. The conclusions of the Health Risk Assessment Report are that no acute short-term health effects are expected from the present contaminant levels, however, contaminant levels are at unacceptable concentrations for lifetime use due to the increased risk of cancer. The total carcinogenic risk at present contaminant concentrations with no additional treatment is 2.5×10^{-5} over a 70 year period.

Based on this assessment of public health risks and environmental impacts at the site, the consultants evaluated various remedial alternatives in the Feasibility Study (FS). The primary objective of this evaluation was to protect human health and reduce contamination in the aquifer. Since the source of contamination was not confirmed during the RI, it is proposed to perform the remedial measures at this site in two phases (operable units). The first phase will primarily address the protection of human health. The second will investigate and remediate the source and will address clean up of the aquifer. The following remedial alternatives, for this first phase, were selected for a final detailed evaluation:

- Alt. 1 - No Action, Continue Existing Purge Well Operation, Monitoring.
- Alt. 2 - Additional Purge Wells.
- Alt. 3 - Air Stripping at the Ranney Well, Continue Existing Purge Well Operation.

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- Alt. 4 - Air Stripping and Additional Purge Wells.
- Alt. 5 - New Endicott Supply Well.
- Alt. 6 - New Surface Water Supply
- Alt. 7 - Water Supply from Surrounding Community (Johnson City)

Each of these remedial alternatives were evaluated in detail using non-cost and cost criteria. The non-cost categories were: technical aspects (effectiveness, useful life, operation/maintenance requirements, demonstrated performance, constructability, time to implement/achieve results, worker safety, and public safety); institutional aspects; public health aspects; environmental aspects; and conformance to regulatory guidelines.

In consideration of the cost and non-cost criteria, Alternative 3-Air Stripping at the Ranney Well, is recommended for implementation. This alternative includes the following principal components:

- Dual air stripping towers each designed to handle 50% (2050 gpm) of the peak Ranney Well capacity. The towers will not be enclosed in a building and will have a total overall height of 40 feet.
- Three 50% design capacity air blowers, one as a backup unit. The blowers will be enclosed in a building to reduce noise.
- A reinforced concrete clearwell which will serve as an underground pump suction tank and provide surge capacity to maintain continuous pumping for water distribution.

The total estimated present worth of the recommended remedial alternative is \$2,400,000. This includes \$1,000,000 in construction costs and annual operation and maintenance (O & M) costs of approximately \$147,000 per year.

A conservative estimate (using a safety factor of 10) of the net effect of the air stripper operation will be to remove 99% of the vinyl chloride and 90% of other volatiles. This would result in a reduction of the carcinogenic risk to 7.1×10^{-7} for a seventy year exposure period.

Any questions or comments may be directed to Robert J. Cozy, P.E., Project Engineer, New York State Department of Environmental Conservation, 50 Wolf Road, Albany, New York 12233-4011 or by calling (518) 457-5677.

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